Institute of Medicine (IOM) Report
Immunization Safety Review:
SV40 Contamination of Polio Vaccine and Cancer
Released October 22, 2002

Overview of the IOM Report

Background

In 2000, the Centers for Disease Control and Prevention (CDC) and the National Institutes of Health (NIH) asked the Institute of Medicine (IOM) to establish an independent expert committee to review hypotheses about existing immunization safety concerns. To date, the committee has released reports on the measles, mumps, rubella (MMR) vaccine and autism; thimerosal-containing vaccines and neurodevelopmental disorders; multiple immunizations and immune dysfunction; and, hepatitis B and demyelinating neurological disorders.

Simian virus 40, or SV40, was discovered in 1960. It occurs naturally in some species of monkeys, though it does not typically cause symptoms or illness except in cases where the animal has chronic problems with its immune system. Soon after its discovery, SV40 was identified in polio vaccine. At the time, rhesus monkey kidney cells, which contain SV40 if the animal is infected, were used in preparing polio vaccine. Once the contamination was recognized, steps were taken to eliminate the virus from future vaccines. Interest in SV40 has increased in the last several years because the virus was found in certain forms of cancer in humans.

Conclusions

The IOM's Immunization Safety Review Committee found that the evidence is inadequate to accept or reject a causal relationship between SV40-containing polio vaccines and cancer. The committee also concluded that

1. the biological evidence is strong that SV40 is a "transforming" virus (able to transform normal cells into malignant cells),
2. the evidence is of moderate strength that SV40 exposure could lead to cancer in humans under natural conditions, and
3. the evidence is of moderate strength that SV40 exposure from polio vaccine is related to SV40 infection in humans.

Recommendations

In light of the biological evidence supporting the theory the SV40-contamination of polio vaccines could contribute to human cancers, the committee recommends continued public health attention in the form of policy analysis, communication, and targeted biological research. These recommendations include development of sensitive and specific blood tests for SV40 and a vaccine contamination and prevention plan. The committee did not recommend a review of the current use of polio vaccine on the basis of concerns about cancer risks, because the vaccine used today is free of SV40.

Next Steps
The committee has made helpful recommendations about policy analysis, communication, and biological research which are important to resolve outstanding issues related to the hypothesis that SV40 contaminated polio vaccine causes cancer. These recommendations will be considered in depth by Public Health System agencies over the next several months.

Links to actual IOM report

The IOM report and the news release are available on the Web at

- http://National-Academies.org
- http://www.iom.edu/imsafety